

What is claimed is:

1. A method of detecting motion for digital camera, said method comprising the steps of:
  - 5       storing gray level values of a specific group in a first image;
  - capturing real-time gray level values corresponding to said specific group in a real-time image;
  - comparing said real-time gray level values of said specific group in said real-time image with said gray level values of said specific group in said first image;
  - 10      determining whether gray level differences between said specific groups in said real-time image and said first image are greater than a predetermined threshold value, wherein said gray level differences greater than said threshold value indicate an object of said real-time image is in motion or else no motion is occurring in the real-time image;
  - 15      performing a sequential step for the object detected to be in motion when said gray level value differences are greater than said threshold value; and
  - storing said real-time gray level values of said specific group in said real-time image as said gray level values of said specific group in said first image.
- 20     2. The method according to claim 1, wherein said specific group substantially includes one or a plurality of specific points selected from said images.
3. The method according to claim 2, wherein said specific points are uniformly distributed over entire image.

4. The method according to claim 2, wherein said specific points are partially concentrated on a central portion of entire image for enhancing detecting efficiency of the central portion of entire image.

5       5. The method according to claim 2, wherein an amount of said specific points is adjustable depending on the detecting efficiency.

6. The method according to claim 1, wherein the step of determining whether gray level differences between said specific groups in said real-time image and said 10 first image are greater than a predetermined threshold value further comprises:

subtracting said gray level values of said specific group in said first image from said real-time gray level values of said specific group in said real-time image to generate a plurality of gray level differences of said corresponding specific groups; and  
determining whether said gray level differences are greater than said 15 predetermined threshold value;

wherein any one of said gray level differences being greater than said predetermined threshold value indicates the object of said real-time image is in motion.

7. The method according to claim 6, wherein said threshold value is adjustable 20 for changing a detection sensitivity of the digital camera.

8. The method according to claim 1, wherein said sequential step comprises taking photos, taking a motion picture, sounding an alarm, or flashing a LED light to warn a system operator or a guard.

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9. The method according to claim 1, further comprising the steps of:  
setting a parameter F equal to 1 when the object of said real-time image is  
determined to be in motion; and  
setting said parameter F equal to 0 when the object of said real-time image is  
5 determined to be motionless.

10. The method according to claim 9, wherein after storing said real-time gray  
level value of said specific group in said real-time image as a gray level value of said  
specific group in said first image, further comprises the steps of:

10 checking said parameter F;  
performing sequentially the motion detection steps when said parameter F is  
equal to 0; and  
stopping motion detection steps for a predetermined time when said parameter F  
is equal to 1 and resetting said parameter F equal to 0 to continue the motion detection  
15 steps.

11. A method of detecting motion for a digital camera, said method comprising  
the steps of:

20 storing gray level values of a specific group in a first image;  
capturing real-time gray level values corresponding to said specific group in a  
real-time image;  
comparing said real-time gray level values of said specific group in said real-  
time image with said gray level values of said specific group in said first image;  
determining whether an amount of specific points with different gray levels  
25 between said specific groups in said real-time image and said first image is greater than

N, wherein the amount of specific points with different gray levels greater than N indicates an object of said real-time image is in motion or else no motion in the real-time image;

5 performing a sequential step for the object detected to be in motion when the amount of specific points with different gray levels is greater than N; and

storing said real-time gray level values of said specific group in said real-time image as said gray level values of said specific group in said first image.

12. The method according to claim 11, wherein said specific group substantially includes one or a plurality of said specific points selected from said images.

13. The method according to claim 12, wherein said specific points are uniformly distributed over entire image.

15 14. The method according to claim 12, wherein said specific points are partially concentrated on a central portion of entire image for enhancing detection efficiency of the central portion of entire image.

15. The method according to claim 12, wherein an amount of said specific points is adjustable depending on the detection efficiency.

16. The method according to claim 11, wherein the step of determining whether an amount of specific points with different gray levels between said specific groups in said real-time image and said first image is greater than N further comprises:

25 subtracting said gray level values of said specific group in said first image from

said real-time gray level values of said specific group in said real-time image to generate a plurality of gray level differences of said corresponding specific groups; and

determining whether an amount of said gray level differences unequal to zero is greater than N;

5 wherein the amount of said gray level differences unequal to zero being greater than N indicates the object of said real-time image is in motion.

17. The method according to claim 16, wherein N is adjustable for changing a detection sensitivity of the digital camera.

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18. The method according to claim 11, wherein said sequential step comprises taking photos, taking a motion picture, sounding an alarm, or flashing a LED light to warn a guard.

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19. The method according to claim 11, further comprising the steps of:  
setting a parameter F equal to 1 when the object of said real-time image is determined to be in motion; and  
setting said parameter F equal to 0 when the object of said real-time image is determined to be motionless.

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20. The method according to claim 19, wherein after storing said real-time gray level value of said specific group in said real-time image as a gray level value of said specific group in said first image, further comprises the steps of:

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checking said parameter F;

performing sequentially the motion detection steps when said parameter F is

equal to 0; and

stopping motion detection steps for a predetermined time when said parameter F is equal to 1 and resetting said parameter F equal to 0 to continue the motion detection steps.

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